

On some of the parasitic fungi common in the neighbourhood, by Mr. F. J. Warner, F.L.S.; Notes on new or rare Hampshire insects, by the Rev. W. Spicer; and an interesting paper on Lapland.

THE *Geographical Magazine*, August.—This number opens with an interesting account, illustrated by a map, of the Cameron African Expedition up to the beginning of the present year. In "The Lufji River and the Copal Trade," some account is given of recent explorations of the delta of this little-known African river. Capt. Davis continues his notes on the voyage of the *Challenger*, Mr. G. Turner his "Impressions of Jamaica," and Mr. H. P. Malet his "Sign-posts on Ocean's Highway," in which he brings together various theories on the formation of mountains. "Djetyshahr (Eastern Turkestan), its Sovereign and its Surroundings," is the title of a paper, with a map, by Mr. R. Michell. In an article on "The Archaeological Survey of India," an account is given of some important discoveries recently made among the Buddhist remains of Bharahut, in the Central Provinces. The number also contains a very interesting account of a recent visit to the Caroline Islands.

Bulletin de la Société d'Anthropologie de Paris, t. viii.—The diminution in the population of France which had taken place between the census of 1866 and that of 1872, and is far in excess of what may be referred to losses in battle and the annexation by Germany of the Alsace-Lorraine territory, has been made the subject of a series of papers by M. Bertillon. The whole subject of the decrease of the population in France is one that is necessarily engaging the attention of medical as well as statistical writers. In the discussion which M. Bertillon's paper raised at the ordinary meeting of the Society, M. Lagneau drew attention to the results given in a paper read by himself before the Académie de Médecine On the census of 1872 and the condition of the population of France, in which he has attempted to show that the small number of births when compared with the deaths is to be referred, not to any special ethnogenic or climatic relations, but rather to the influence of certain laws of succession and subdivision of property, and to the agency of military enactments, the one inducing late marriages and the other enforcing celibacy on a large proportion of men in the prime of life.—A valuable Report has been drawn up under the direction of the Commissioners for Algeria, by M. le Général Faïdherbe and others, on the anthropology of that province, and has been formally presented to the Anthropological Society of Paris. After a general preliminary dissertation by M. Faïdherbe on the different races which have occupied or still occupy the Algerine territory, Dr. Topinard considers at great length the ethnological, social, moral, linguistic and other relations of the Arabs and Berbers, who constitute the main branches of the French tributary tribes.—M. Roujou attempts in a lecture, which he delivered before the Society in the course of last year, to prove that a fair-haired race occupied the Gallic soil before the advent of the Germanic tribes, including Gauls under that denomination. He is of opinion that the ancestors of the Hellenes, the constructors of those megalithic remains which extend from the Atlantic to the Indian Ocean and from Scandinavia to Africa, and the fair-haired invaders of Egypt, who sixteen or seventeen centuries before our era had reached the Nile from the north-west, all belonged to one ancient blonde race, which long before the appearance of Teutons and Gauls had occupied Western Asia, Northern Africa, and the lands of Europe as the dominant or aristocratic class. M. Roujou discusses the much vexed question whether the primitive Celtic races were fair or dark, dolichocephalic or brachycephalic, the former opinion being maintained by Dr. Pruner Bey, while the latter view is supported by all the learning that the great anthropologist, Dr. Broca, can advance in its favour.

Annali di Chimica applicata alla medicina, vol. lviii. No. 6, June.—This part concludes the eighteenth volume and contains the following papers:—In pharmacy, G. Righini furnishes a contribution on the iodides of sodium and ammonium and the production of iodoform in a mixture of these salts.—Dr. Coutinho furnishes a paper on the use of *Jaborandi*, a tree growing in North Brazil.—There is also a paper in this section on Anglo-Saxon condensed milk, reprinted from *Le Mouvement Médical* for March.—In hygiene, there is a paper by Pietro Carpani On a simple method for determining the quantity of lead contained in pewter vessels.—Action of water on lead, by Fordos.—In dietetics, Dr. F. Turbacco furnishes the concluding part of his paper On cheese and its alimentary use.—In physiology, Dr. G.

Cappelli has a communication On the anti-fermentative action of boric acid and its efficacy in certain diseases.—Studies relating to the question of heterogenesis, by Prof. G. Cantoni.—Under the heading "Varieties" there is a paper by Gioachino Curti On the substitution of the earth of the *solfatara* of Pozzuoli for sulphur in the sulphurisation of vines.

Gazzetta Chimica Italiana, fascicolo iv.—This number commences with a paper by Prof. E. Pollacci On the mode of action of sulphur on calcium carbonate. Dr. Giuseppe Bellucci furnishes also a contribution on the same subject.—Chemical analysis of a marine plant (*Posidonia oceanica*, Koen) used in Liguria as manure, by Fausto Sestini.—Hugo Schiff contributes a paper On some derivatives of phloretine. The author describes in detail the method of preparing this substance, also the preparation of phloroglucine, phloretic acid, phloroglucide and triphloretide.—A. Pavesi and E. Rotondi give an account of the work done in the chemical laboratory of the Agricultural College of Milan. This comprises papers On rice oil; On the analysis of volcanic ashes which fell at Naples; the solubility of calcium phosphate in sulphurous acid; On parabussine, a new alkaloid contained in *Buxus sempervirens* (the sulphate has the formula $C_{26}H_{48}N_2OSO_4H_2$); On a practical method of determining the degree of acidity of milk; and, finally, On the quantitative determination of tannin especially in the must of grapes and in wine, modification of Flek's method.—The following papers are communicated from the station at Asti:—On the chalkiness of must, by Dr. I. Macagno.—Influence of light on vegetation, by the same author.—Experiments on the process of fermentation, by the same author.—The remainder of this part consists of a summary of foreign journals.

SOCIETIES AND ACADEMIES

LONDON

Royal Horticultural Society, August 5.—W. A. Lindsay in the chair.—The Rev. M. J. Berkeley called attention to *Euchisia procumbens*, an interesting species—probably nearly hardy and suitable for rockwork—from New Zealand; *Pania macrostachya* and *Clethra arborea* were sent from the gardens of Syon House.—Mr. H. B. Hennel exhibited a large plant of *Lilium auratum* with two stems—one fasciated, bearing forty-eight, and the other seventeen flowers.

PHILADELPHIA

Academy of Natural Sciences, Feb. 3.—Dr. Ruschenberger, president, in the chair.—Dr. Chapman exhibited a dissection of one of the hind legs of a musk-rat, *Fiber zibethicus*. The tendons of the tibialis anticus, extensor proprius hallucis, and extensor longus digitorum, pass down a groove in the tibia and under a little process of bone. The extensor longus digitorum is held down by an additional process. This arrangement seems to quicken the extension of the foot, and is of use apparently to the animal in swimming.—Prof. Leidy remarked that while it was exceptional to find the same species of the higher sub-kingdoms in the different parts of the world, it appeared to be the rule that most species of *Protozoa* were found everywhere under the same conditions. A large number of our fresh-water forms he had recognised as the same as those described by European authors. A less number of species are probably peculiar to every region. Among our fresh-water *Rhizopods* he had observed not only the genera *Amoeba*, *Arcella*, *Difflugia*, *Euglypha*, *Trinema*, *Lagymis*, *Actinophrys*, &c., but also most of the species of these as indicated by European naturalists. It is an interesting question whether our fresh-water *Protozoa* have reached us from the same sources as those of Europe and other remote countries. If derived from the same sources they were probably infused in the waters of the different continents at an early age when the latter were not separated by ocean barriers. If thus early infused we have a remarkable instance of a multitude of specific forms retaining their identity through a long period of time. Such a view might appear to oppose the doctrine of evolution, but not justly so, for the simplest forms would be the slowest or least likely to vary, while the most complex, from their extended relationships, would be most liable to variation. Perhaps, however, the simplest forms of life, of the same species, may have originated independently of one another, not only in different places, but also at different times, and may yet continue to do so. While the highest forms of life may have been slowly evolved from the

simplest forms of the remotest age, equally simple forms may have started into existence at all times down to the present period. From the later original forms new ones may have been evolved to speed towards the same goal as those which preceded them.

Feb. 17.—Dr. Ruschenberger, president, in the chair.—Prof. Leidy made some remarks on the mode of reproduction and growth of the *Desmids*. In illustration he described a common species of *Docidium* or *Pleurotenium*. This consists of a long cylindroid cell constricted at the middle and slightly expanded each side of the constriction. When the plant is about to duplicate itself the cell-wall divides transversely at the constriction. From the open end of each half-cell there protrudes a colourless mass of protoplasm defined by the primordial utricle. The protrusions of the half-cells adhere together and continue to grow. The bands of endochrome now extend into the protrusions and subsequently keep pace with their growth. The protrusions continue to grow until they acquire the length and form of the half-cells from which they started. The exterior of the new half-cells thus produced hardens or becomes a cell-wall like that of the parent half-cells. In this condition two individuals of *Docidium* are frequently observed before separation. During the growth of the new half-cells the circulation of granules in the colourless protoplasm is quite active. In a species of *Docidium* $1\frac{1}{2}$ mm. long by $\frac{1}{10}$ mm. broad, the growth of the new half-cells was observed to be at the rate of about $\frac{1}{3}$ mm. in an hour.

March 3.—Dr. Ruschenberger, president, in the chair.—Prof. Leidy read an extract from a letter relating to mammalian fossils in California, from Dr. Lorenzo G. Yates, of Centreville, Alameda County, California.

March 10.—Dr. Ruschenberger, president, in the chair.—Elevation of the trunk of trees.—Mr. Thomas Meehan suggested on a former occasion that trees growing on a rock, by the natural thickening of the roots beneath would lift the tree four inches in forty years. Since that time, however, Dr. Lapham, the botanist, and State geologist of Wisconsin, had suggested to him that frost gradually lifted trees so that the trunk would sometimes appear in time to have elongated a foot or more. Since Dr. Lapham had made the suggestions, he had examined trees in the vicinity of Philadelphia and found unmistakable evidence that large numbers of trees had been raised in the manner stated. It was likely that one of the chief offices of the tap roots was to guard the tree from this frost-lifting as much as possible. His impression was that the trees of tropical climates had not near the development of tap roots which are found in the more northern ones, but this was a matter for further investigation.

March 24.—Dr. Ruschenberger, president, in the chair.—Prof. Leidy read a paper on *Actinophrys* sol.

VIENNA

Imperial Academy of Sciences, March 26.—Prof. Freih. von Ettingshausen presented a memoir On the history of the development of terrestrial vegetation. The first part treats of Tertiary floral elements and the genetic relation of these to present flora; the second, the elements of European flora.—Dr. Schrötter spoke on the transformation of ordinary into amorphous phosphorus, through action of electricity, and described three forms of apparatus prepared by Dr. Geissler, of Bonn, for the purpose. There is evidence that the change is wrought neither by the light nor by the heat accompanying the current, but by the electricity itself.—Dr. Meyer presented a second paper On new and imperfectly known birds of New Guinea and the islands of the Bay of Geelvink.—Dr. Frombeck communicated a memoir On an extension of the doctrine of sphere functions and the forms of development, from these, of a function in infinite series.

PARIS

Academy of Sciences, Aug. 3.—M. Bertrand in the chair.—The following papers were communicated:—Double series of drawings representing terrestrial cyclones and solar spots, executed by M. Faye. The drawings are to be published in the *Mémoires*; the present communication contains a detailed description of them.—Eighth note on guano, by M. E. Chevreul. The author has detected the following salts in guano:—Ammonium carbonate and chloride, calcium urate, phosphate, and oxalate; certain potassium salts of volatile organic acids. The following double salts have been recognised:—Potassium ammonium oxalate, potassium ammonium sulphate, sodium ammonium

phosphate, and magnesium ammonium phosphate.—Note on a meteorite which fell on May 20, 1874, in Turkey, at Virba, near Vidin, by M. Daubrée. The fall was accompanied by a loud noise, and the mass, weighing 3.6 kilograms, penetrated 1 metre into the soil. Analysis showed that the meteorite contained nickel-iron, chrome-iron, ferric sulphide, and an insoluble residue, probably containing enstatite.—Additional note on the fall of meteorites which took place on July 23, 1872, in the district of Saint-Amand (Loir-et-Cher), by M. Daubrée. By an attentive examination of the surface of the soil, four other meteorites weighing respectively 3, 0.3, 0.6, and 0.6 kilograms, have been discovered.—Blast of sirocco experienced in Algiers on June 20, 1874, and followed over a great part of Algeria, by M. Ch. Sainte-Claire Deville.—Observations made during the last days of the appearance of Coggia's comet; a letter from P. A. Secchi to the perpetual secretary. The author obtained undoubted evidence of polarisation. The linear spectrum of the nucleus apparently continuous was resolved by careful examination into a banded spectrum, the interruptions of which were most apparent near the bands of the second spectrum superposed upon the continuous spectrum of the nucleus. A drawing of the spectrum accompanied the letter.—Indication of a method of establishing the properties of the ether, by M. X. Kretz.—Reply to a former note by M. Houyvet on the scheme for re-establishing a central sea in Algeria, by M. E. Roudaire. The author does not fear that the evaporation would dry up the proposed sea into a salt lake as suggested by M. Houyvet; he is of opinion that such a circumstance would be entirely prevented by the establishment of an inferior counter current.—Memoir on the thermal effects of magnetism, by M. A. Cazin. The author has determined approximately the magnetic equivalent of a calorie.—Researches on explosive bodies; explosion of powder; by MM. Noble and F. A. Abel; continuation of first memoir.—Fourth note on the electric conductivity of ligneous bodies, by M. T. du Moncel.—On the passivity of iron, by M. P. de Reynon. The author attempts to explain this phenomenon by a voltaic action transferring oxygen to the iron, and thus polarising the surface of this metal.—On some bismuth and tungsten minerals from the Meymac mine (Corrèze), by M. Ad. Carnot.—Observations on the development of the peripheral nerves of the larvæ of Batrachians and Salamanders, primary and secondary fibres, M. Ch. Roget.—Reproduction by photography of different crystallisations such as are seen under the microscope, by M. J. Girard.—Note on the stratification of the tail of Coggia's comet, by M. A. Barthélemy.—On isoterebenthene from a physical point of view, by M. J. Riban. The author has instituted comparisons between the physical properties of this substance, terebene, and terebenthene.—Constitution of ordinary brominated propylene, by M. E. Reboil.—Action of nitric acid on paraffin; different products obtained; by M. A. G. Pouchet. Among other substances, *paraffinic acid* ($C_{26}H_{54}NO_{10}$) is obtained, which the author has examined in some detail.—On the action of chloral on the blood, by MM. V. Feltz and E. Ritter.—Observations on the hailstones which fell at Toulouse during the storm of July 28, 1874, by M. N. Joly.—Reply to M. Leymerie on the subject of the carboniferous limestone of the Pyrenees and the St. Béat marbles, by M. F. Garrigou.—Observations of a bolide at Versailles on the evening of July 27, by M. Martin de Brettes.—Observation of a bolide at Toulon on July 27, by M. Lecourgeon.

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